

Remarks

Claims 1, 2, 4-18 and 20-35 remain pending in the application.

Claim Rejections -- 35 U.S.C. 103

A. Claims 1-2, 4-14, 16-18, 20-21 and 24-33

Claims 1-2, 4-14, 16-18, 20-21 and 24-33 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

Claim 1 recites as follows.

1. A method of generating a software program executable binary file, the method comprising:
 - accessing a first file for a first module including source code therein;
 - accessing a second file for a second module including object code therein and further including object file summary information; and
 - generating the executable binary file from at least the first and second files,wherein the object file summary information includes a **summary intermediate representation (SIR)** and an extension to a linker symbol table, and
wherein the object file summary information is used in optimizing the executable binary file generated.

(Emphasis added.)

As shown above, claim 1 recites that “the object file summary information includes a **summary intermediate representation (SIR)** and an extension to a linker symbol table”. (Emphasis added.)

In particular, consider the limitation that “the object file summary information includes a **summary intermediate representation (SIR)**” As described in the specification, “The SIRs may also be referred to as per-procedure summary data.” (Page 8, lines 11-12.) “The SIR includes a summary symbol table per procedure and a list including exposed pointer assignments (SIR assignments).” (Page 8, lines 28-29.)

In contrast, the latest office action cites to col. 9, lines 46-59 of Hiranandani in relation to the claim limitation that “the object file summary information includes a summary intermediate representation (SIR)”. However, this citation to Hiranandani merely recites “**intermediate ‘.o’ files 404a-404n**” (emphasis added). There is no disclosure or suggestion in the citation of the claimed “summary **intermediate representation**” (emphasis added). The citation to Hiranandani merely uses the word “intermediate,” but that word is used in a completely different technical context (in relation to an intermediate object file, not an intermediate representation).

Thus, for at least the above-discussed reasons, applicants respectfully submit that claim 1 overcomes this rejection. Claims 2, 4-14, 16-18, 20-21 and 24-25 depend from claim 1. Hence, these claims also overcome this rejection for at least the reasons discussed above in relation to claim 1.

Claim 26 recites, “wherein the object file summary information includes a summary **intermediate representation (SIR)** and an extension to a linker symbol table.” (Emphasis added.) Therefore, claim 26 also overcomes this rejection for at least the reasons discussed above in relation to claim 1. Claims 27-30 depend from claim 26. Hence, these claims also overcome this rejection.

Claim 31 recites, “computer-readable object file summary information including a summary **intermediate representation (SIR)** and an extension to a linker symbol table for use by a compiler in optimizing executable code including the module.” (Emphasis added.) Claims 27-30 depend from claim 26. Hence,

these claims also overcome this rejection. Claims 32-33 depend from claim 31. Hence, these claims also overcome this rejection.

B. Claims 2 and 27

Claims 2 and 27 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claim 1, claim 2 recites **"disambiguating memory accesses otherwise considered aliased using the object file summary information."** (Emphasis added.) This aspect is discussed in the specification. For example, page 7, lines 8-16, states as follows. "In accordance with an embodiment of the invention, the object file summary information (OFSI) is used in performing a "points-to" analysis so as to disambiguate memory accesses otherwise considered aliased. Points-to analysis determines the points-to relations of memory locations or memory alias information. The results of the points-to analysis may be used by a compiler to disambiguate memory accesses that are otherwise considered aliased. The improved alias information provided by points-to analysis advantageously benefits optimization of the compiled code, including scheduling performed by the compiler backend."

The latest office action cited to col. 9, lines 54-59 of Hiranandani against claim 2. However, this citation to Hiranandani does not even mention memory accesses, much less disambiguating memory accesses otherwise considered aliased.

Therefore, applicants respectfully submit that this citation to Hiranandani does not disclose or suggest the limitation of claim 2. Hence, for at least this additional reason, applicant respectfully submits that claim 2 overcomes this rejection.

Claim 27 is a system claim which recites that "a points-to analyzer that uses the object file summary information to **disambiguate memory accesses otherwise considered aliased.**" (Emphasis added.) Thus, claim 27

overcomes this rejection for at least the reasons discussed above in relation to claim 2.

C. Claim 4

Claim 4 stands rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claim 1, claim 4 recites that "the extension to the linker symbol table includes a **flag indicating whether a procedure exposes a memory address** by storing the address in a location accessible outside the procedure." (Emphasis added.) Against claim 4, the latest office action cites col. 6, lines 44-56 of Ho. However, this citation to Ho does not even mention memory addresses or a flag, much less a flag indicating whether a procedure exposes a memory address by storing the address in a location accessible outside the procedure.

Therefore, applicants respectfully submit that this citation to Ho does not disclose or suggest the limitation of claim 4. Hence, for at least this additional reason, applicant respectfully submits that claim 4 overcomes this rejection.

D. Claims 5 and 32

Claims 5 and 32 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claim 1, claim 5 recites that "the SIR includes a summary **symbol table**." (Emphasis added.) Against claim 5, the latest office action cites col. 9, lines 55-59 of Hiranandani. However, this citation to Hiranandani does not even mention any symbol table.

Therefore, applicants respectfully submit that this citation to Hiranandani does not disclose or suggest the limitation of claim 5. Hence, for at least this

additional reason, applicant respectfully submits that claim 5 overcomes this rejection.

Claim 32 recites that "the SIR includes a summary **symbol table**." (Emphasis added.) Thus, claim 32 overcomes this rejection for at least the reasons discussed above in relation to claim 5.

E. Claims 6 and 33

Claims 6 and 33 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claims 1 and 5, claim 6 recites that "the summary symbol table includes global and static symbols accessed in a procedure, formal parameters of the procedure, return location for the procedure, and other procedures called by the procedure." Against claim 6, the latest office action cites col. 9, lines 54-65 and col. 11, lines 43-48 of Hiranandani. However, these citation to Hiranandani do not even mention any symbol table, much less a symbol table including global and static symbols accessed in a procedure, formal parameters of the procedure, return location for the procedure, and other procedures called by the procedure.

Therefore, applicants respectfully submit that these citations to Hiranandani do not disclose or suggest the limitation of claim 6. Hence, for at least this additional reason, applicant respectfully submits that claim 6 overcomes this rejection.

Claim 33 recites that "the summary symbol table includes global and static symbols accessed in the module, formal parameters of the module, return location for the module, and other procedures called by the module." Thus, claim 33 overcomes this rejection for at least the reasons discussed above in relation to claim 6.

F. Claim 10

Claim 10 stands rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claims 1 and 5, claim 10 recites that "the SIR uses an operator to adjust an address expression by an offset." Against claim 10, the latest office action cites col. 10, lines 65-67 and col. 11, lines 41-50 of Hiranandani. However, these citations to Hiranandani relate to call graphs and do not mention or relate to an operator to adjust an address expression.

Therefore, applicants respectfully submit that these citations to Hiranandani do not disclose or suggest the limitation recited in claim 10. Hence, for at least this additional reason, applicant respectfully submits that claim 10 overcomes this rejection.

G. Claim 11

Claim 11 stands rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claims 1 and 5, claim 10 recites that "the SIR uses an operator to take an address of a function or variable." Against claim 11, the latest office action cites col. 11, lines 9-13 of Hiranandani. However, this citation to Hiranandani relates to nodes and edges of a call graph and does not mention or relate to an operator to take an address of a function or variable.

Therefore, applicants respectfully submit that this citation to Hiranandani do not disclose or suggest the limitation recited in claim 11. Hence, for at least this additional reason, applicant respectfully submits that claim 11 overcomes this rejection.

H. Claim 12

Claim 12 stands rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882). Applicants respectfully traverse this rejection.

In addition to the reasons discussed-above in relation to claims 1 and 5, claim 12 recites that "the SIR uses an operator to merge pointer values from different control flow paths." Against claim 12, the latest office action cites col. 11, lines 41-47 of Hiranandani. However, this citation to Hiranandani relates to a call graph and does not mention or relate to an operator to merge pointer values.

Therefore, applicants respectfully submit that this citation to Hiranandani do not disclose or suggest the limitation recited in claim 12. Hence, for at least this additional reason, applicant respectfully submits that claim 12 overcomes this rejection.

I. Claims 22-23 and 35

Claims 22-23 and 35 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882) and further in view of Lohman (US 5,826,087). Applicants respectfully traverse this rejection.

Claims 22-23 depend from claim 1, and claim 35 depends from claim 31. Therefore, these claims are patentably distinguished over Hiranandani in view of Ho for at least the reasons discussed above in section A. The citation to Lohman does not cure the above-discussed deficiencies of Hiranandani and Ho. Therefore, applicants respectfully submit that claims 22-23 and 35 overcome this rejection.

J. Claims 15 and 34

Claims 15 and 34 stand rejected under 35 U.S.C. 103 as being unpatentable over Hiranandani (US 5,812,855) in view of Ho (US 5,923,882) and

further in view of Haber (US 6,966,055). Applicants respectfully traverse this rejection.

Claim 15 depends from claim 1, and claim 34 depends from claim 31. Therefore, these claims are patentably distinguished over Hiranandani in view of Ho for at least the reasons discussed above in section A. The citation to Haber does not cure the above-discussed deficiencies of Hiranandani and Ho. Therefore, applicants respectfully submit that claims 15 and 34 overcome this rejection.

Conclusion

For the above-discussed reasons, applicants respectfully submit that the pending claims overcome all the rejections of the office action. Favorable action is respectfully requested.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 08-2025 (Hewlett Packard).

Respectfully Submitted,

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